### ****PYTHON****

### ****Introduction****

**Python** is a **high-level, interpreted, general-purpose programming language** developed by **Guido van Rossum** in **1991**.  
It emphasizes **code readability**, using simple syntax that allows programmers to express concepts in fewer lines of code than other languages like C++ or Java.

Python is an **open-source** language widely used for **web development, data science, artificial intelligence, automation, and software development**.

### ****History****

Developed by **Guido van Rossum** at **CWI (Centrum Wiskunde &Informatica)** in the Netherlands.

First released in **1991**.

Named after the comedy series **“Monty Python’s Flying Circus”**, not the snake.

Current major version: **Python 3.x**, which is the most widely used version.

### ****Features of Python****

* **Easy to Learn and Read:** Simple English-like syntax makes it beginner-friendly.
* **Interpreted Language:** No need for compilation; Python executes line by line.
* **Object-Oriented:** Supports classes, inheritance, and encapsulation.
* **Portable:** Works on all platforms (Windows, macOS, Linux).
* **Extensive Libraries:** Thousands of pre-built libraries for every task (NumPy, Pandas, TensorFlow, etc.).
* **Dynamic Typing:** No need to declare variable types; they are determined at runtime.
* **Open Source:** Freely available and community-supported.
* **High-Level Language:** Handles memory management automatically.
* **Embeddable:** Can be integrated with other languages like C/C++ or Java.
* **Versatile:** Used in multiple domains — from web development to AI.